Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
	)	CG Docket No. 17-59
Advanced Methods to Target and Eliminate	)	
Unwanted Robocalls	)	

REPLY COMMENTS OF SHOCKEY CONSULTING LLC

INTRODUCTION AND SUMMARY

My name is Richard Shockey. I am the Principal of Shockey Consulting LLC, a private firm in Northern Virginia advising telecommunications companies, technology suppliers, the investment community, and national regulatory agencies on any number of issues related to Voice over IP, PSTN Transition, Network Design and Architecture, Peering, Robocalls, Caller ID spoofing, Numbering and Signaling. www.shockey.us

I am also Chairman of the Board of Directors of the SIP Forum, an IP communications industry association that engages in numerous activities that promote and advance SIP-based technology. Among the SIP Forum's work is the development of SIPconnect, the most widely adopted SIP profile for IP-PBX or Unified Communications as a Service to carrier interconnection. www.sipforum.org

I was directly involved in the formation of the SIP Forum and The Alliance for Telecommunications Industry Solutions (ATIS) Joint IP-NNI Task Force that developed a national technical recommendation for All IP Network to Network Interconnection and jointly

continues to advance the STIR/SHAKEN Call Authentication Framework for combating Robocalls and Caller ID spoofing. [1]

I am currently a member of the US Federal Communications Commission North American Numbering Council (NANC) [3RD term] and have been a former member of the FCC Communications Security Reliability and Interoperability Council (CSRIC).

I have filed briefs before the FCC, testified before the U.S. Congress, the Canadian Radio-television and Telecommunications Commission (CRTC) and OFCOM the National Telecom Regulator of in the United Kingdom.

I am a co-founder and co-chaired the Internet Engineering Task Force (IETF) ENUM Work Group [RFC 6116] and an author of several IETF RFC's. I have participated in IETF activities for over 25 years.

I wish to comment on the Commissions Sixth Further Notice of Proposed Rule Making [2] as it relates to the requirement that telephone companies make notifications to calling parties using either the SIP 603 or SIP 607-608 Codes if a call has been blocked. I should make it clear at the outset that the Commission's requirement for notification of call blocking is a viable and essential mechanism for notifying the calling party of call blocking so that it may investigate to determine whether the call was blocked in error.

It is my strong technical opinion that the SIP 603 Code can, with some modest enhancements, completely fulfill the role that the Commission requires without overly burdening telephone companies with technical standards that clearly will be extremely difficult to implement.

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[1] https://www.sipforum.org/activities/technical-wg-overview-and-charter/atissip-forum-nni-task-force-charter/

[2] Advanced Methods to Target and Eliminate Unlawful Robocalls – Petition for Reconsideration and Request for Clarification of US Telecom – The Broadband Association, CG Docket No. 17-59, Order on Reconsideration, Sixth Further Notice of Proposed Rulemaking, and Waiver Order, FCC 21-126 (rel. Dec. 14, 2021)

A. THE ARGUMENT PUT FORTH BY THE ASSOCIATIONS AND INCOMPAS, AMONG OTHER, COMMENTERS IS IN ERROR

A recent filing by an influential group of Associations including the American Bankers Association and The American Association of Healthcare Administrative Management et.al. and others [3] postulate, simply because the IETF has approved RFC 8688 [608] and RFC 8197 [607], they are actually ready for use. This is a fundamental misunderstanding of how the standards process works in real practice within communications networks. The IETF is not omnipotent and often IETF standards are developed in a vacuum without understanding how and if these standards could be operationalized in voice networks. Many IETF standards are never adopted for use by the industry for a variety of reasons.

SIP in particular is a collection of dozens of RFCs that have often proven difficult to integrate and that had required additional technical standardization by other standards bodies to create an operationally functional specification. In addition, vendors and voice network operators often interpret these standards differently which creates issues with interoperability. The SIP Forum was called on by the industry to fulfill the role of defining interconnection between IP-PBX systems and service provider networks.[4]

It is my professional technical opinion that there will need to be substantial work to develop 607 or 608 as a technical profile, which indicates to me that neither code is viable in the near term. I have substantial questions whether RFC 8688 [608] can be implemented at all. Its requirements for encryption and use of the jCard are both complex and, in my professional

[3] https://ecfsapi.fcc.gov/file/1020198841674/ABA_JointTrades_Comment_SixthFurtherNPRM_2022_01_31_final.pdf
[4] https://www.sipforum.org/activities/technical-wg-overview-and-charter/sipconnect-2-0-task-group/

opinion very burdensome to implement and would require a new Public Key Infrastructure (PKI) and governance structure. This would be similar to the standards work that was necessary to develop the STIR/SHAKEN protocol. It is also not clear how intermediary network elements would treat the 608 Code as well. Arguably, much of the value of STIR/SHAKEN is already being lost due to the presence of TDM in intermediate networks. Although there are interworking standards between SIP Response Codes and TDM Cause Codes, end to end transmission of SIP Response Code 608 has the potential to be similarly impacted where TDM networks are within the call path. The Joint ATIS SIP Forum IP-NNI Task Force is currently developing a technical standard to extend IP interconnection over general internet connections to provide an all IP call path over existing IP networks to address this issue.

Since the FCC has clarified that the notification is only required when blocking is based on analytics, 607 should be out of scope since it is returned when the end user blocks the call. But if the industry chooses to develop standards for end-user initiated blocking there much work to be done towards final standardization of 607. Not only operationalization and implementation, but also privacy issues that would need to be worked out prior to development of a profile. 607 was written with the assumption that it would be used by the terminating service provider to identify unwanted calls so that that service provider can better protect its subscribers from such calls. Members of the IP-NNI task force exploring potentially creating a profile for 607 have raised concerns about the privacy issues that would affect consumers to the extent that calls blocked by individual consumers would allow their individual preferences to be communicated directly to the called party. These privacy other policy issues would need to be resolved prior to creating an interoperability profile of 607.

B. OBSERVATIONS AND RECOMMENDATIONS

It is my professional technical opinion that comments in this Docket by US Telecom [5] , Transaction Network Solutions [6] and NTCA [7] among others point to a solution.

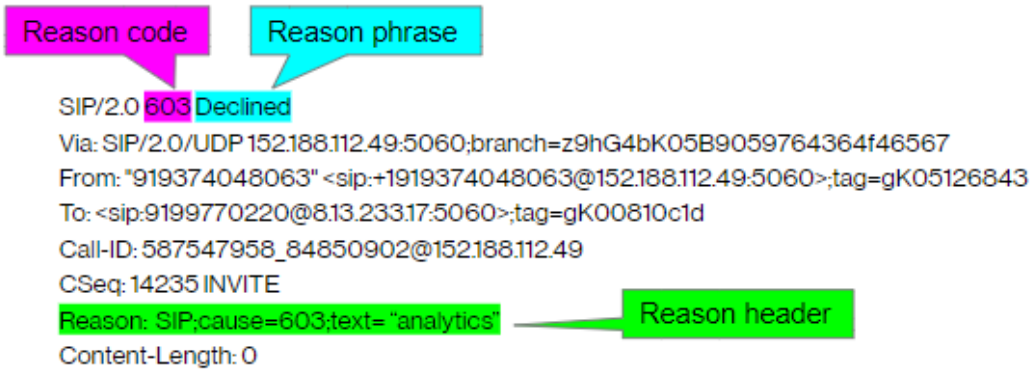
The issue is simply how the Commission's goal of providing meaningful notification can be accomplished, and what is the shortest, best path to success. It is my strong technical recommendation that the use of 603 can, in fact, be expanded, to accomplish the Commissions essential goals and that the Joint ATIS SIP Forum IP-NNI Task Force is the most appropriate technical committee to produce a normative and prescriptive profile for implementation in the United States voice communications network. This could be accomplished in a much shorter time frame than profiling 607 and 608. In my professional opinion an expanded 603 profile document would be met with widespread and effective voice industry adoption, enhance network interoperability, and deprecate the need for 608 and 607 entirely. In addition, such a 603 "plus" profile would be fully extensible now and, in the future, should new notification requirements emerge.

End user voice networks that rely upon SIP have been in place for years. These existing networks are expected to accept SIP response codes such as 603 based upon the original SIP profile. However, a SIP Response Code such as 608 is a new code not originally contemplated in the development of SIP. Thus, not only would many provider networks need software updates, but end user networks will also require software updates. This becomes a challenge especially to the mid- and small-sized end user networks as many may have minimal technical

[5] https://ecfsapi.fcc.gov/file/10131192018169/USTelecom%20-%20Comments%20on%20Blocking%20Notification%20Sixth%20FNPRM%20-%20Final.pdf
[6] https://ecfsapi.fcc.gov/file/1013132936621/TNS%20Call%20Blocking%20Sixth%20FNPRM%20Comments.pdfs
[7] https://ecfsapi.fcc.gov/file/101311003626603/013122%2017-59%20NCTA%20Comments%20on%20607_608%20Notification%20FNPRM.pdf

awareness or support. Thus, these networks may be placed at risk without software updates that have the capability to acknowledge and process a new SIP Response Code such as 608. However, since SIP Response Code 603 was originally designed into the SIP profile, it is expected that these end user networks would generally accommodate the expanded use of SIP Code 603.

The following is a highly primitive first pass on how a 603 plus Code might look on the wire.



Working through the specifics could be accomplished by the NNI Task Force with modest effort in a timely manner. The process would be substantially faster than the work required for 607 or 608.

C. IN CONCLUSION

The Commission should not sunset the use of 603 nor impose a burden on both operator and end user networks to implement 607 or 608 now or in the future.

Respectfully submitted,

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